electrical interface **840** via electrical conductor **820**. In one embodiment, the interface comprises a mechanical connector that secures electrical contacts to a mating interface. In another embodiment, the interface is a wireless interface that communicates with another entity, which may host a display controller. Alternatively, a display controller **850** may be integrated with the visual interface, wherein the interface **840** couples the controller to another entity, for example, to an entity located on a host device. In this latter embodiment, the display controller is electrically coupled to and drives the picture elements.

**[0027]** In one embodiment, the configuration of the visual interface may be changed by configuring or re-configuring the adjustable frame. The frame may be configured manually or automatically. In one embodiment, the size and or shape of the frame is changed hydraulically or with servo-motors. The display may be configured automatically based on opening or closing a particular software application. For example, it may be desirable to increase the size of the visual interface when viewing a video clip or image. It may also be desirable to view certain content in a landscape orientation, or to view movie content in a 16:9 format. The display configuration could be changed to a default configuration upon closing the application, or to change to a default configuration when the device is powered off. Also, the user may be empowered to ultimately control the configuration of the display and may be allowed to override any automatic display configurations. Such control could be exercised by the user at a control interface of the host device.

**[0028]** In another embodiment, the display comprises a material that changes size and/or shape in response to an applied electrical signal. In one embodiment, for example, the substrate includes an electro-active polymer (EAP). In one application, the display size and/or shape of the display is changed by applying power to the EAP. An EAP material may also be used to detect changes in the size and/or shape of the substrate. For example, one or more EAP strips extending across the substrate may be used to detect changes in the configuration of the substrate, since an electrical characteristic of the EAP changes when the EAP shape is changed. In another embodiment, the display includes a memory shape plastic that changes size and/or shape upon application of voltage thereto. In another application, changes in the shape and/or size of the display induced by an external force, for example, by a configurable frame or by a user, may be detected by monitoring electrical changes in the EAP. Detection of changes in the configuration of the display may be used by the display controller to control the display, for example, to address the pixels, as discussed below.

**[0029]** FIG. **9** illustrates a portable electronic device **900** comprising a display **910** and a display controller **920**. In other applications, however, the device **900** is not necessarily portable. For example, the device could be integrated in another system, like an automobile. In one embodiment, the display controller is integrated with the visual interface. In another embodiment, the controller is part of the device and is coupled to the display via an interface. The display controller may be a dedicated controller or it could be a general purpose controller. The display is typically implemented as a software controller digital device that addresses picture elements and controls brightness and contrast among other display functions known generally by those having ordinary skill in the art.

**[0030]** According to another aspect of the disclosure, the controller controls one or more characteristics of the visual interface based on the configuration of the viewable display area, for example, based on the shape and/or size of the viewable display area. In one embodiment, the processor includes a pixel addressing module **920** that addresses pixels based on the configuration of the visual interface and particularly based on the configuration of the viewable display area thereof. In one particular implementation, the controller enables a greater number of picture elements when the size characteristic of the viewable display area is relatively large and the controller enables a lesser number of picture elements when the size characteristic is relatively small.

**[0031]** In another implementation, the controller addresses a group of neighboring picture elements as a single picture element, wherein the number of neighboring picture elements in the group are dependent on the size of the viewable display area. For example, the controller may address a lesser number of neighboring picture elements in the group when the size characteristic of the display is smaller, and the controller may address a greater number of neighboring picture elements in the group when the size characteristic of the display is greater. Such an addressing scheme may provide uniform pixel density when the viewable display area is configured between large and small areas. For example, some pixels may be turned off, or not addressed, when the pixel density is relatively high.

**[0032]** In another embodiment, the processor includes a brightness control module **922** that controls the brightness of the display. In one implementation, the brightness of the visual interface is controlled based on the size characteristic of the viewable display area. For example, the brightness of the pixels may be increased when the visual interface has a relatively large size configuration relative to the brightness when the display has a relatively small size. Such a brightness control scheme could be used to maintain constant lumens per unit area of the display as the viewable display area changes from one configuration to another.

**[0033]** In another embodiment, the processor includes detection module **924** capable of detecting a change in the configuration of the viewable display area. The controller may then control another characteristic, for example, the brightness or addressing scheme, of the visual interface in response to detecting the configuration of the viewable display area. In one embodiment, the detection module receives inputs from one or more sensors, for example, sensors that detect changes in the size or configuration of an adjustable frame that captures the visual interface. In another embodiment, the detection module detects the configuration of the viewable display area by detecting a change in an electrical property of the substrate, for example, a change in the electrical property of the EAP based substrate.

**[0034]** In FIG. **9**, the controller also comprises a display configuration module **926** that controls the configuration, and particularly the size and/or shape, of the viewable display area. For example, the module **926** may control the configuration of the viewable display area of an EAP based display by applying a voltage to the EAP. The display configuration module may prompt configuration of the viewable display area based on input from a user, or upon the opening of an application program, or some other event. In one embodiment, the viewable display area is configured based on content displayed on the visual interface. For example, the display may be configured for a 16:9 aspect ratio to accommodate content provided by a video application, or the display may be configured with a portrait configuration to display text generated by a word processing application.

**[0035]** While the present disclosure and the best modes thereof have been described in a manner establishing possession and enabling those of ordinary skill to make and use the same, it will be understood and appreciated that there are